UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/675,096	09/28/2000	Hsin-Chu Tsai	042390.P8829	9115

7590   06/05/2003

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EXAMINER
MONESTIME, MACKLY

ART UNIT	PAPER NUMBER
2676	

DATE MAILED: 06/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _21 April 2003_ .

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☐ Claim(s) _____ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-24_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____ .

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _7_ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

Response to Amendment

1.   The amendment received on April 21, 2003 has entered and carefully considered. Claims

1-24 are still pending in the application.

Claim Rejections - 35 U.S.C. § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

3.   Claims 1-4, 6-8, 11-12, 14-16 and 20-23 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Tischler (US Patent No. 6,483,516) in view of Cosman (US Patent No.

5,651,104).

4.   Tischler was cited in the last office action.

5.   As per claims 1-2, 11 and 20-21, Tischler substantially disclosed the invention as claimed,

including a computer system comprising: a central processor unit to execute non-graphics

instructions (Fig. 3, Item No. 136; col. 4, lines 51-54) a graphics core (Fig. 3, Item No. 138); and

a unified graphics cache coupled to the graphics core (Fig. 3, Item No. 140, col. 8, lines 14-30)

wherein the unified graphics cache stores texture data, color data and depth data (col. 6, lines 27-

42).

Tischler did not explicitly disclose a graphics core to compute graphical transformations

via supersampling techniques, but Tischler did disclose the use of a graphics unit being able to

perform graphics operations (Fig. 3, Item No. 138). However, Cosman disclosed a computer

graphics system and process for adaptive supersampling in which a graphics processor is used to

compute graphical transformation via supersampling (col. 9, lines 26-48). Therefore, taking the

combined teachings of Cosman and Tischler as a whole, it would have been obvious to a person

of ordinary skill in the art at the time the invention was made to combine the cited references

because doing so would not only provide greater texture detail when displaying polygons defined

at oblique angles; but also provide an improved computer graphics system that can display oblique

texture mapped polygon with minimal aliasing and minimal loss of detail without exceedingly high

processing loads.

6.   As per claims 3 and 22, Tischler disclosed a central processing unit and a CPU cache

coupled to the CPU core (Fig. 3, Items No. 136, 140).

7.   As per claims 4 and 23, Tischler disclosed a bus interface coupled to the CPU cache and

the graphics cache (Fig. 3, Item No. 142).

8.   As per claim 6, Tischler disclosed a main memory coupled to the bus interface (Fig. 3,

Item No. 104).

9.   As per claims 7-8, 12 and 14, Tischler disclosed that the graphics core amplifies polygons

and renders the polygons into the graphics cache; and image polygons are implemented via

viewport transformation (col. 1, lines 25-35).

10.   As per claims 15-16, Tischler further disclosed that the process of rendering the

polygons comprises: setting the image polygons and rasterizing pixels within the image polygons

(col. 1, lines 31-35).

11.   Claims 5, 19 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Tischler in view of Cosman as applied to claims 1, 11 and 20 above and further in view of Penna

et al (US Patent No. 6,498,606).

12.   Penna was cited in the last office action.

13.   As per claims 5, 19 and 24, Tischler and Cosman did not explicitly disclose that the

graphics core operates according to a tile based rendering architecture. However, the concepts

and associated advantages of using a tile based rendering architecture are well known in the art. It

can be evidenced in the reference by Penna et al in which a tile based rendering technique is used

(col. 5, lines 23-29). It would have been obvious to a person of ordinary skill in the art at the time

the invention was made to have utilized the tile based rendering architecture taught by Penna et al

into the system of Tischler and Cosman because doing so would provide greater design flexibility

and efficiency by allowing different memory arrangement in a tile oriented operation, thereby

enhance the processing speed of the graphics system.

14.   Claims 9, 13 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Tischler in view of Cosman as applied to claims 1, 11 and 20 above and further in view of Pfister

et al (US Patent No. 6,448,968).

15.   Pfister et al was cited in the last office action.

16.   As per claims 9, 13 and 17, the combination did not disclose that the graphics core

downsampling the image polygons after the polygons have been rendered. However, Pfister et al

disclosed the use of a downsampling technique (col. 12, lines 2-10). Moreover, numerous

downsampling methods are well known in the graphics art; for instance downsampling often

refers to a sampling of the image data by a factor of two in both the horizontal and vertical

directions. In addition, the downsampled pixel value of a block of pixels in an image may be the

medium value of all pixels in that block, wherein the block size is four pixels, which is typical, the

values of the pixels in the block may be added together and divided by four. Therefore, it would

have been obvious to a person of ordinary skill in the art at the time the invention was made to

have utilized the downsampling technique taught by Pfister et al into the system of Tischler and

Cosman because doing so would enhance the quality of the resulting image.

17.   Claims 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tischler

in view of Cosman and further of Pfister et al as applied to claims 1-9 and 11-17 above, further,

further in of view of Li et al (US Patent No. 5,860,060).

18.   Li et al was cited in the last office action.

19.   As per claims 10 and 18, the combination did not the downsampling of the image

polygons are implemented by executing a bit aligned block transfer. However, the use of a bit

aligned block transfer is well known in the graphics art. It can be evidenced in the reference by Li

et al in which a bit blt hardware accelerator is used (col. 7, lines 19-20). It would have been

obvious to a person of ordinary skill in the art at the time the invention was made to combine the

cited references because doing so would provide   high quality "antialiased" text and graphics

without requiring the calculation of colors by the host processor.

Response to Arguments

20.   Applicant's arguments with respect to claims 1-24 have been considered but are moot in

view of the new ground(s) of rejection.

Conclusion

21.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office

action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is

reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR

1.136(a) will be calculated from the mailing date of the advisory action. In no event, however,

will the statutory period for reply expire later than SIX MONTHS from the date of this final

action.

Applicant is required to give full consideration to these prior art references when responding to this office action.

The prior arts made of record and not relied upon is considered pertinent to applicant's disclosure.

Deering et al (US Patent No. 6,496,187) taught a graphics system configured to perform parallel sample to pixel calculation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mackly Monestime whose telephone number is (703) 305-3855. The examiner can normally be reached on Monday to Thursday from 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella, can be reached on (703) 308-6829.

Any response to this action should be mailed to:

Commissioner of Patent and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, Va, Sixth Floor (Receptionist).
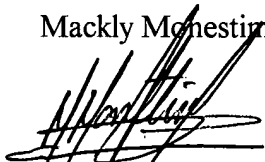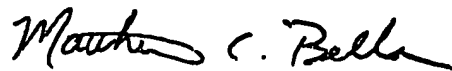
Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the Technology Center 2600 Customer Service Office whose telephone

number is (703) 306-0377.

Mackly Monestime

Patent Examiner

May 27, 2003

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600